

## Association for Information Systems AIS Electronic Library (AISeL)

---

UK Academy for Information Systems Conference  
Proceedings 2013

UK Academy for Information Systems

---

Spring 3-19-2013

# The implementation of IS/IT projects in service-centric organisations

Udechukwu Ojiako

*University of Johannesburg*, [uojiako@yahoo.ca](mailto:uojiako@yahoo.ca)

Stuart Maguire

*University of Sheffield*, [s.maguire@sheffield.ac.uk](mailto:s.maguire@sheffield.ac.uk)

Stamati Teta

*National and Kapodistrian University of Athens*, [teta@di.uoa.gr](mailto:teta@di.uoa.gr)

Follow this and additional works at: <http://aisel.aisnet.org/ukais2013>

---

### Recommended Citation

Ojiako, Udechukwu; Maguire, Stuart; and Teta, Stamati, "The implementation of IS/IT projects in service-centric organisations" (2013). *UK Academy for Information Systems Conference Proceedings 2013*. 28.  
<http://aisel.aisnet.org/ukais2013/28>

This material is brought to you by the UK Academy for Information Systems at AIS Electronic Library (AISeL). It has been accepted for inclusion in UK Academy for Information Systems Conference Proceedings 2013 by an authorized administrator of AIS Electronic Library (AISeL). For more information, please contact [elibrary@aisnet.org](mailto:elibrary@aisnet.org).

# THE IMPLEMENTATION OF IS/IT PROJECTS IN SERVICE-CENTRIC ORGANISATIONS

**Udechukwu Ojiako**

*University of Johannesburg, Johannesburg South Africa*

Email: uojiako@uj.ac.za

**Stuart Maguire**

*University of Sheffield, Sheffield UK*

Email: s.maguire@sheffield.ac.uk

**Stamati Teta**

*National and Kapodistrian University of Athens, Athens Greece*

Email: teta@di.uoa.gr

**Thanos Papadopoulos**

*University of Hull, Hull UK*

Email: A.Papadopoulos@hull.ac.uk

**Alasdair Marshall**

*University of Southampton, Southampton UK*

Email: a.marshall@soton.ac.uk

**Melanie Ashleigh**

*University of Southampton, Southampton UK*

Email: mja@soton.ac.uk

**Maxwell Chipulu**

*University of Southampton, Southampton UK*

Email: m.chipulu@soton.ac.uk

## **Abstract**

*This study explores the implementation of IS/IT projects in service-centric organisation. The study was carried out to conform to the principles of participatory action research. To undertake the study, a case study is employed. Data is collected from historical*

*document examination and the cross referencing of service themes drawn from literature. Three themes that impact on the implementation of IS/IT in service-centric organisations emerge as being of particular importance to the implementation of IS/IT projects in service-centric organisations.*

**Keywords:** IS/IT projects, implementation, service-centricity

## **1.0 Introduction**

### **1.1 Conception**

Despite growing interest among scholars (Paton and McLaughlin, 2008; Spohrer and Maglio, 2008; Maguire et al., 2012) and managerial practitioners, the notion of ‘service’ remains conceptually opaque (see Sampson, 2012). There are several reasons for this. For example, service is seen as intangible (Akkermans and Vos, 2003). It also consists of a series of interrelated processes and actions (Johns 1999), which may sometimes not be complementary (Ojiako, 2012; Ojiako et al., 2012a). Scholars (Vargo and Lusch, 2008; Ordanini and Parasuraman, 2011), have also continued to emphasise that there are no universally acceptable definitions of ‘service’ for practitioners to work with. This opacity creates considerable challenges when putting forward theory-based propositions for project implementation within service-centric organisations.

A number of current studies that have sought to put forward such theory-based propositions of service are limited by their focus on specific service dimensions instead of recognising their multidimensionality (see Voss, 2003). This situation has created what may well be regarded as a ‘*particularistic*’ conception of service where, in effect, organisations strive to articulate service in constructively simple ways that deliberately exclude complicating factors that pose implementation challenges.

### **1.2 Service-centricity**

Service-centric organisations are firms that have re-dedicated and re-designed their entire governance, operational and implementation process models and structures to focus on service delivery. The rationale is to create the necessary structures that ensure an organisation has the ability to optimize its service delivery capabilities (Yu and Kittler, 2012). Drawing upon extant project management literature (see McDermott et al., 2001; Keel et al., 2007), Maguire and Ojiako (2008) and Wikstrom et al., (2009), had

suggested that to be able to deliver IS/IT in service-centric organisations, they need not only to recognise the “complexity of the interactions between the existing systems and new systems being introduced” (Maguire and Ojiako, 2008; p. 175), but also be able to “bring the customer’s experience to the forefront of management attention” (p. 188).

Service-centricity represents a recent evolution within the service research paradigm. It departs from the traditional way of defining services from a systems perspective by adopting an ideology emphasising scalable agility (Ren and Lyytinen, 2008), and readiness to respond effectively and efficiently to changing customer needs (Zhao et al. 2007). To achieve this objective, Zhao et al. (2008), suggest that service-centric organisations emphasise component-based service architectures, implying that services within an enterprise offering are designed to function independently. The very characteristics of services make their economic value highly dependent on human factors. The key therefore is to intensify the need for service enhancements successful utilisation of project management.

To explore this proposal, we present a case study examining the implementation of IS/IT projects in service-centric organisations. The study is driven by recognition of two factors. First, although the notion of service-centricity is well recognised in service research (Joachim, 2011), and scholars (e.g. Zhao et al. 2007), argue that an implementation framework emphasising resource utilisation and process standardisation is at the core of the service-centricity paradigm, we observe that scholars (Lemon, 2010; Moussa and Touzani, 2010), looking to set the agenda for the wider service research field appear to have limited interest in project implementation factors, even though research suggests that successful IS/IT service delivery challenges are best resolved through project management application (Kerzner, 1987; Pan, 2005). Similarly, we do not observe an emphasis on the service industry by scholars within project management, even though that a considerable number (24% according to Scott and Shepherd, 2002), are major enterprise-wide projects which traditionally have a poor delivery record. The case study employed focuses on the UK’s National Programme for IT (*NPIIT*), one of the most expensive and ambitious IS/IT projects ever conceived in the public sector. The primary objective of the project was to deliver to the UK’s public health provider, the National Health Service (NHS), a unified and centrally managed

electronic base health care record system that will connect over 30,000 health practices and outlets.

To facilitate the objectives of this study, the remainder of this paper is structured as follows:-In section two a brief review of ‘service’ literature is presented. Following this section three outlines the research methodology. Section four presents the findings and examines how the services imperative possibly impacts on IS/IT project implementation. Textual analysis unmasks the presence of significant tensions and interdependencies across various two major themes, specifically ‘*service systems design*’, ‘*project management*’ and ‘*project politics*’ which are discussed in section five. The paper concludes in section six.

## **2.0 Service**

### **2.1 The dominance of Service**

Service has numerous dimensions (Voss, 2003) and implies, in the broadest of terms, one receiving benefits from a set of activities carried out by another person (Johns, 1999). The critical aspect of service is that it is assumed that one will generally be in a position to procure the service, perhaps from another source or from directly undertaking a series of specific actions. The ambiguous construction of service implies a multi-dimensional definition. Scholars such as Voss et al. (2004) for example define service from a cultural perspective. Conversely, Curran et al. (2003) see service from an attitudinal perspective including attitudes towards technology for example. The multi-dimensional and ambiguity surrounding ‘service’ is a valid reason why its definition needs to be established before being conceived as a vision (Ordanini and Parasuraman, 2011).

While Spohrer and Maglio (2008) from a service innovation perspective have voiced concerns that companies are still failing to place innovation at the apex of their service vision, other scholars (Lavikka et al., 2009) emphasize the need to examine a broader concept of service that transcends disciplinary borders. It is from this broader perspective that a burgeoning sector in the form of *service science* has emerged. *Service science* (see Spohrer and Maglio, 2008; Maguire, 2010) is naturally interdisciplinary, being heavily dependent on efficacy at the confluence between customers, IS/IT, logistics, employees and marketing units (Spohrer and Maglio, 2008). Evidenced by

substantial strides in the development of technology and IS/IT over the last few years indicates that *service science* is being conceived as a discipline that may propel service delivery beyond its current capacity.

Not all previous IS/IT research will naturally fit the Systems Sciences agenda. Where IS/IT directly interface with a company's customers and clients it is crucial that the correct change, project, and risk management methodologies are used to ensure service continuity. A number of authors such as Orlikowski and Barley (2001) and Wainwright and Waring (2004), have viewed IS/IT as more aligned to change management and organisational behaviour than with technological issues. This was earlier reinforced by Spanos (2002), who stated that an organisation is basically shaped by forces that operate together in the context of a competitive environment which are in "dynamic equilibrium" and reflect a firm's fundamental method of operation, leading to the accomplishment of a firm's objectives. If the organisation's information systems fail to support its organisational systems, the result is a waste of resources, negating the forces which are needed to achieve its goals. This shows further alignment with the aforementioned definitions of services science. The important aspect for services science is that a significant proportion of organisations in advanced economies are running their businesses in the context of a market economy. They must therefore serve customer needs better than their competitors for the purpose of business survival. This may be the lever for historically non-information-oriented organisations to utilise IS/IT to gain a competitive advantage and improve customer service. At a basic level if a firm's customers can obtain similar goods and services at a better price, to a better specification, or more conveniently elsewhere, then this will affect an organisation's cash-flow and may lead to business failure. A competitive advantage is continually sought between competitors in the same sector. In general, the desire is to create a much closer relationship between the manufacturer and customers, leading to a new level of expectations in service, and a further shift in emphasis away from the physical product, toward service delivery.

## **2.2 Service and IS/IT**

Information Systems and Information Technology (IS/IT) is a core competitive and strategic competency for most organisations (Bendoly et al., 2009). Evidence of the importance of IS/IT exploitation in the enhancement of service is re-emphasized by Zhou et al. (2010) and Bardhan et al. (2010) who identify the pervasive nature of technology as forming an envelope that encompasses the entire service agenda. Our interest on the question of what possible impact the services imperative has on the success of IS/IT projects being implemented within service-centric organisations cannot therefore be explored outside the context of what *the real value of IS/IT* is to organisations (see Ojiako et al., 2012a), especially when very significant costs are associated with the implementation of IS/IT projects, which appear to continue to grow exponentially. According to Carr (2003), IS/IT budgets in most companies have grown from about 5% of the overall capital expenditure of firms (in 1956), to over half of overall capital expenditure (by 2000). Concerns about the escalating cost of IS/IT have led scholars (Grover and Ramanlal, 1999; Carr, 2003, 2005) to question the value of the overall benefit of IS/IT, inferring that the perceived value of IS/IT may in fact be at best ‘overstated’. This is especially prominent in service environment where (i) IS/IT does not represent a ‘unique’ commodity in the possession of only a few organisations and (ii) where a perceived overemphasis of IS/IT may degrade the customers service experience.

### **2.3 IS/IT projects in service-centric organisations**

The strategic importance of service has driven considerable research interest into how its implementation can be achieved (Bygstad and Lanestedt, 2009; Dominguez-Péry et al., 2012). From a burgeoning research agenda, scholars (Spohrer et al., 2007; Spohrer and Maglio, 2008) argue that opportunities to create a new ‘discipline’ in *service science*, has emerged. There is however some scepticism about this *new* discipline. For example, Grandison and Thomas (2008) claim that a new discipline will create tensions between relatively abstract concepts such as culture, and the demands for technological standards. In fact, some commentators such as Maguire (2010; p. 1) suggested that the concept may just be “old wine in new bottles”.

After an eighteen month study program by Ostrom et al. (2010), identified interdisciplinary research priorities for service research, leading to the identification of

ten concerns. One such concern was the need to examine ways of implementing IS/IT projects that leverages technology functionality in a way that enhances service delivery capability. Such studies are however challenged by a number of factors. First, from the plethora of research in this area (Gopal et al. 2011; Jarvenpaa and Keating 2011), confirm that a concise understanding of the technological, human, and organisational factors that impact on IS/IT project implementation in service-centric organisations is yet to be agreed. This implies that specific variables that may measure whether service is actually being delivered to the satisfaction ease and perceived usefulness of customers remains elusive, even though studies by Venkatesh and Bala (2008), have addressed the notion of the perceived usefulness of technology.

Numerous IS/IT projects, about 24% (see Scott and Shepherd, 2002), in service-centric organisations are major enterprise-wide projects. Typically, such projects are more easily conceived, than implemented (Maguire, 2007; Zhao et al., 2008), and have been associated with a dismal record of failure for several reasons including poor project conceptualisation (Carver and Jackson, 2006) and politics (Pinto, 2000). Being fundamental to organisations (Mintzberg, 1985), politics is generally accepted to be experienced within projects. It then implies that majority of projects that fail may do so because of the considerable dynamics between organisational factors (such as cultural dynamics), that exist in firms. Additionally, we posit that irrespective of numerous studies that identify and rank the criticality of success factors in IS/IT project implementation in service-centric organisations, the mere fact that these factors are critical, makes it unwise to propose that the criticality of success factors are generic or even implied to be so, nor that they can be universally applied across the board, simply because of the reality that each project is unique. We argue that because of the interdisciplinary nature of service, there is considerable opportunity for ‘project management’ within service; however, the service imperative appears silent on implementation. Based on the forgoing review, and utilising the notion of ‘*what are the key issues*’ (see Stuart et al., 2002; p. 422), we propose the research question;

- What are the key factors that impact on the success of IS/IT projects being implemented within service-centric organisations?



### 3.0 Research Method

#### 3.1 The case study

Case studies emphasise a high level of contextualisation of real life events (Eisenhardt, 1989). As a research method, case studies enable the harmonisation of possible boundaries that may exist between theory and practice (Gummesson, 1994). Case study research has been utilised in studies examining IS/IT service delivery and implementation (see for example Benbasat et al., 1987; Cavaye, 1996), leading us to adopt a five stage case research framework earlier proposed by Stuart et al. (2002).

The study focused on UK's National Programme for IT (*NPfIT*). The *NPfIT* included the development of national electronic bookings, prescriptions and patient records systems relying on a central data 'spine', a high-speed network and upgraded Patient Administration Systems (*Pas*) and clinical software in hospitals across the United Kingdom. The challenges facing the project were on an unprecedented scale, with overall health policy shifts on top of technical and logistical issues. The cultural issues of deploying new systems that users may be comfortable with were also significant. Initially, *NPfIT* was given a budget of £2.3 billion.

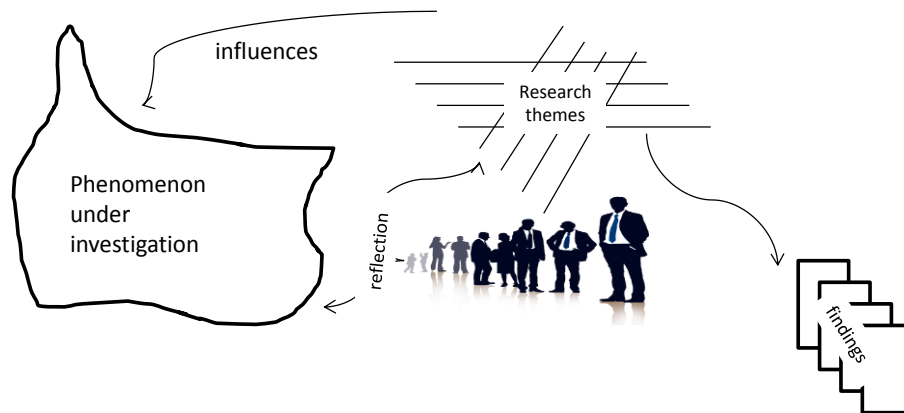
The UK government planned a whole range of IS/IT investment for the NHS. Then UK Cabinet minister and Secretary of State for Health Frank Dobson had unveiled the UK's health service seven year IS/IT strategy in September, 1998, perhaps to some observers, some six months later than expected (Ojiako et al., 2010). Hospitals and General Practitioners (GPs) were expected to receive a substantial cash boost from the government's £5 billion NHS modernisation fund. The detailed 120-page document (Department of Health, 1998) called for the networking of every General Practitioner (GP) and hospital via the NHS intranet.

The key goal of the *NPfIT* was to create a single electronic health record for all UK residents (by 2005). Key services such as the NHS intranet (*NHSnet*) would be funded centrally by government (with the *NPfIT* programme office monitoring budgets and expenditure). This approach was adopted rather than a situation where each user organisation was separately billed, thus promising savings to a health network often described as too expensive. At the time of commissioning, Frank Burns, head of NHS IT

Department, suggested that the *NPfIT* project showed the NHS was serious about long-term and sustainable IS/IT investment. It must however be noted that scholars such as Maguire (2007), had pointed out that questions on the NHS's ability to implement large scale IS/IT systems had always remained an area of concern.

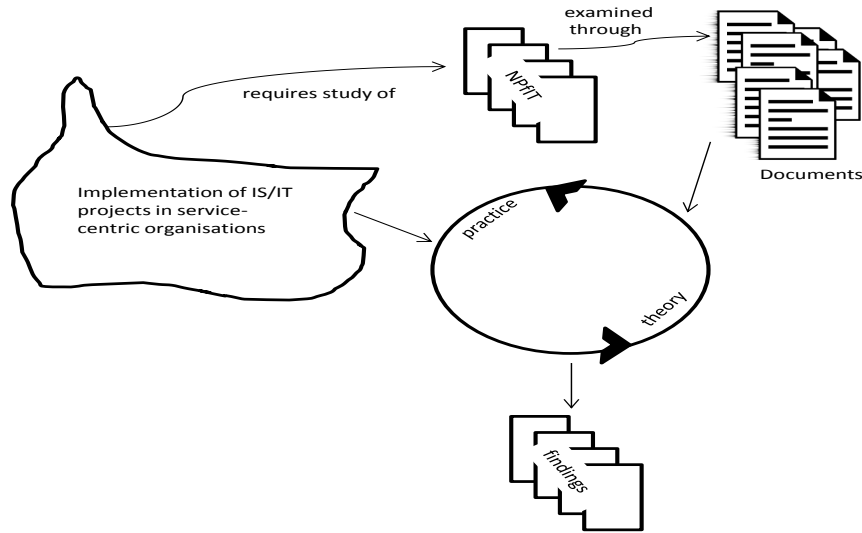
### 3.2 Research structure

The study was carried out to conform to the principles of participatory action research (Sarah et al., 2002; Brydon-Miller et al., 2003; Burgess, 2006). This research methodology (see Figure 1, adapted from Maguire and Ojiako, 2007) may involve practitioners serving as not only both subjects, but also being able to influence the phenomenon under exploration (see Grant, 2007).



**Figure 1. Participatory Action Research**

Unlike earlier studies where the authors had adopted an interventionist philosophy which implied seeing to influence the phenomenon under exploration (see Maguire and Ojiako, 2007), in this study, the researcher adopt a role which is more passive (see Figure 2).



**Figure 2. The Study Philosophy**

In order to address the research question, data was collected from historical document examination (see Table 1), and the cross referencing of specific service. The primary driver behind the themes being to gain insights into the ‘*what*’ (Easton, 2010, p. 121), as relates to the impact of the services agenda on success in IS/IT projects being implemented within service-centric organisations.

Reference	Document/Report
1	National Audit Office (2006), “The National Programme for IT in the NHS”, <a href="http://www.nao.org.uk/idoc.ashx?docId=01F31D7C-0681-4477-84E2-DC8034E31C6A&amp;version=-1">http://www.nao.org.uk/idoc.ashx?docId=01F31D7C-0681-4477-84E2-DC8034E31C6A&amp;version=-1</a> , accessed 17/08/12
2	National Audit Office (2008). , “The National Programme for IT in the NHS: Progress since 2006”, The National Programme for IT in the NHS: Progress since 2006. , , accessed 17/08/12
3	National Audit Office (2011), “The National Programme for IT in the NHS: an update on the delivery of detailed care records systems” <a href="http://www.nao.org.uk/idoc.ashx?docId=b2171d57-3120-40a6-abe4-84b878cbf35c&amp;version=-1">http://www.nao.org.uk/idoc.ashx?docId=b2171d57-3120-40a6-abe4-84b878cbf35c&amp;version=-1</a> , accessed 17/08/12
4	Department of Health, 1998. Information for health: an information strategy for the modern NHS 1998-2005,

	<a href="http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4007832">http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4007832</a> , accessed 15/02/11
5	Department of Health, 2012. The power of information: putting all of us in control of the health and care information we need, <a href="http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_134205.pdf">http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_134205.pdf</a> , accessed 01/06/12
6	Bennett, J. (2004), “A guide to implementing electronic booking – ‘the people perspective’”, NHS-National Programme for IT, available at: <a href="http://www.chooseandbook.nhs.uk/documents/implementation/people_perspective.pdf">www.chooseandbook.nhs.uk/documents/implementation/people_perspective.pdf</a> , accessed 11/05/08.
7	Anderson, R., et al. (2010), The NHS’s National Programme for Information Technology (NPfIT): A Dossier of Concerns, <a href="http://homepages.cs.ncl.ac.uk/brian.randell/Concerns.pdf">http://homepages.cs.ncl.ac.uk/brian.randell/Concerns.pdf</a> , accessed 11/05/11.
8	House of Commons Committee of Public Accounts (2011), “The National Programme for IT in the NHS: an update on the delivery of detailed care records systems”, Forty-fifth Report of Session 2010–12, HMSO, <a href="http://www.publications.parliament.uk/pa/cm201012/cmselect/cmpubacc/1070/1070.pdf">http://www.publications.parliament.uk/pa/cm201012/cmselect/cmpubacc/1070/1070.pdf</a> , accessed 11/02/12
9	British Computer Society (2005). BCS Response to NAO Investigation of NPfIT, <a href="http://www.bcs.org/upload/pdf/auditofficejan05.pdf">http://www.bcs.org/upload/pdf/auditofficejan05.pdf</a> , accessed 11/09/11.
10	British Medical Association (2007), “Choose and Book guidance”, available at: <a href="http://www.bma.org.uk/ap.nsf/Content/chooseandbookguide">www.bma.org.uk/ap.nsf/Content/chooseandbookguide</a> , accessed 1/03/08.
11	National Health Service (2008), “National Programme for IT in the NHS: Benefits Statement 2006/07”, <a href="http://www.epractice.eu/files/media/media1919.pdf">http://www.epractice.eu/files/media/media1919.pdf</a> , 14/03/12
12	British Medical Association (2007), “National Programme for IT – NHS Care Records Service “, <a href="http://www.neilb.demon.co.uk/download/BMA_NCRS2.pdf">http://www.neilb.demon.co.uk/download/BMA_NCRS2.pdf</a> , accessed 5/06/10
13	Cabinet Office’s Major Projects Authority (2011), “Major Projects Authority Programme Assessment Review of the National Programme for IT”, <a href="http://www.cabinetoffice.gov.uk/sites/default/files/resources/mpa-review-nhs-it.pdf">http://www.cabinetoffice.gov.uk/sites/default/files/resources/mpa-review-nhs-it.pdf</a> , 04/12/11
14	National Health Service (2004), “The National Programme for IT (NPfIT) Prescribing aspects of the Programme”, <a href="http://www.ehtel.org/activities/tasks-sources/tf-patient-safety-emedication/ehel-seminar-eprescribing-an-overview-of-challenges-and-experiences-in-europe-amsterdam-2004/files/uk_mike-bainbridge_02-06-2004.pdf">http://www.ehtel.org/activities/tasks-sources/tf-patient-safety-emedication/ehel-seminar-eprescribing-an-overview-of-challenges-and-experiences-in-europe-amsterdam-2004/files/uk_mike-bainbridge_02-06-2004.pdf</a> , accessed 8/4/11

**Table 1. Documents and Reports Examined**

As our research goal was to reveal the “what” cause of social phenomenon (see Easton, 2010, p. 121), we classified the emergent concepts from document examination into maps extracted from reading, thus creating an ontology that modelled the social phenomenon under study.

Documents Examined	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Number of Textual sentences analysed														
unique	407	418	227	367	244	226	251	380	194	321	350	377	397	238
total	1070	1191	420	979	462	474	593	924	392	742	849	1018	1057	453
Number of words in relevant sentences														
unique	917	1008	397	833	429	431	515	803	350	663	742	869	908	420
total	1069	1190	419	978	461	473	592	923	391	741	848	1017	1056	452
Density (based on Statements)														
unique	2,25	2,41	1,75	2,27	1,76	1,91	2,05	2,11	1,8	2,07	2,12	2,31	2,29	1,76
total	2,63	2,85	1,85	2,66	1,89	2,09	2,36	2,43	2,02	2,31	2,41	2,7	2,66	1,9

**Table 2. Textual Analysis**

With the aid of AutoMap, we analysed transcribed interviews from the fourteen selected stakeholders in terms of the plethora of presented concepts, the number of unique concepts, as well as the density of the concepts as discussed within the documents examined. The analysis was focused on specific themes which included ‘*failure*’, ‘*success*’, ‘*service*’, ‘*implementation*’, ‘*delivery*’, ‘*systems design*’, ‘*project*’ and ‘*project management*’.

The results of the analysis are presented on Table 2. From the data analysis, the authors came up with three interesting groups of themes. The three themes which emerge (‘*Conception and systems design*’, ‘*Project management*’, ‘*The politics of projects*’), are drawn from earlier work from Bitran and Lojo (1993) who had developed an analytical framework that could be applied to examine strengths/weaknesses of service organisations. In particular, their study had delineated services into three distinct

dimensions consisting of (i) an internal environment focused on structural competencies within the organisation, (ii) an external environment focused on competitive threats, and (iii) the customer. Our interest in this study is on the first (internal- conception and systems design and project management) and second (external-project politics) dimensions of Bitran and Lojo's analytical framework.

## **4.0 Findings**

### **4.1 Conception and systems design**

Articulation of the project objectives of the *NPfIT* were first made public in the 1998 strategy document paper produced by the UK Department of Health titled "Information for Health: An Information Strategy for the Modern NHS 1998-2005" (Department of Health, 1998). The strategy document sought to focus the public on the importance of 'access to good information' as a critical element of improving patient care. In summary, the objectives of the strategy (which the government hoped would be met by 2005) included the achievement of five major objectives including (i) to ensure that patients can be confident that the NHS professionals caring for them have reliable and rapid access, 24 hours a day, to the relevant personal information necessary to support their care, (ii) to eliminate unnecessary travel and delay for patients by providing remote on-line access to services, specialists and care, wherever practicable, (iii) to provide patients with access to accredited, independent, multimedia background information and advice about their condition, (iv) to provide every NHS professional with online access to the latest local guidance and national evidence on treatment, and the information they need to evaluate the effectiveness of their work and to support their professional development and finally, (v) to ensure the availability of accurate information for managers and planners to support local health improvement programmes and the national framework for assessing performance. In effect, the strategy document served as the foundation of the UK government's attempt to give patients more choice to determine their own future healthcare.

It is crucial to recognise that these initiatives were pre-dated by a much earlier launching of the NHS Information Management and Technology strategy (see Murphy, 2004). The Information Management and Technology strategy (IM&T) strategy was

launched in 1992 to support resource management. The NHS management executive produced an overall IS/IT strategy within which individual/local healthcare organizations could develop their own local strategies. Although guided by a set of common principles, the IS/IT strategy did not dictate implementation strategy. Unfortunately, without clarity on over design requirements, it became unclear on how individual/local healthcare organizations would deploy individual systems that will ‘hang off’ the central data ‘spine’ (Ojiako et al., 2010; Ojiako et al., 2012b).

The importance of service design in service delivery is reiterated by scholars such as Iravani et al. (2005) and Zomerdijk and Voss (2010) who point out that service design represents the core of service delivery. Adopting a de-centralised service design philosophy would have serious repercussions for the project in that scholars such as Wainwright and Waring (2004), do point out that fostering a dichotomous understandings of IS/IT enabled services emphasising individual roles of specific contingency variables of service can lead to IS/IT project failure. The situation was particularly compounded by the fact that many NHS organizations had an IS/IT infrastructure in place before the IM&T strategy was launched. Aggravated by poor infrastructure auditing within the NHS, it became difficult, if not impossible, to take advantage of common capabilities that would have facilitated the delivery of a stable platform for the *NPfIT*.

## **4.2 Project management**

According to Anderson et al. (2010), by March 1999, barely a year after the publication of the government’s strategy document, the British Medical Association (BMA), the UK’s primary professional association for doctors warned that the *NPfIT* project was likely to fail due to its unrealistic nature. Concerns were also being raised by local NHS Trust responsible for service delivery at point of contact that the overall timescales for the project was unrealistic due to continued confusion and uncertainty among trusty on the actual implementation schedules (Hendy et al., 2005). Other concerns raised included that of the British Computer Society (BCS, 2005; Collins, 2007), which related to the integrity and security of the system. The BMA also expressed concern that *NPfIT* project sought to deliver service in an airline-style appointment bookings through the NHS Direct telephone service (Bennett, 2004; British Medical Association, 2007; Ojiako et al.,

2010.). Following increased criticism from stakeholders (de Kare-Silver, 2005; E-Health Insider, 2006), and damning reports by the National Audit Office (NAO, 2006, 2008), the UK's independent body responsible for auditing central government departments, the NHS was ordered to tighten up its implementation strategy by introducing specific progress targets and an overall business case linking together its disparate elements. The damning National Audit Office report (NAO, 2011) also produced a litany of criticisms of the NHS's previous strategy. The *NPfIT* strategy, it will appear, was repeating some of the failings of predecessor NHS projects such as the *NHSnet* and patient numbering. In fact according to the NAO (2011), "The problems with implementing care records systems identified in previous ten reports by the National Audit Office and Committee of Public Accounts have continued" (p. 8).

One key aspect of the project which drew particular criticism from the NAO (2006, 2008, 2011), was the fact that the *NPfIT* project lacked clearly articulated means of ensuring that the project deliverables were translated into benefits to customers. Not surprisingly, concerns about the pervasive nature of technology (if un-checked or un-assessed), encompassing the service agenda remains of interest to scholars. According to Maguire and Ojiako (2006), Ojiako et al. (2012b), major reasons for failure of major IS/IT projects within the health sector, is (i) the challenge to balance output expectations and actual delivery emanating from technology and ever-changing customer requirements and (ii) the over-emphasise technology at the expense of the human dimension. In effect, too much technology functionality is deployed without consideration of customer 'fit', in terms of lifestyle, needs and usability. Additionally, studies (see Ojiako et al., 2010), suggest that in a number of cases, systems developers hold a very parochial view of 'customers' as anything except 'real' patients. In effect, systems implementation fails to an extent because of not only limitations with conception and ensuring service design (Pearlson, 2001; Karwan and Markland, 2006), but also the 'internalisation' of customers.

A failure to engage with stakeholders at early stages of the project also affected morale among key stakeholders (NAO, 2006, 2008, 2011). By June 2002, The Department of Health (DoH) requested an extra £5bn from the UK Treasury to spend on IS/IT - with improving NHS broadband links as its first priority. The extra £5bn was to be spread over six years from April 2003, roughly doubling the NHS IS/IT budget. This



meant that there was already drift in relation to cost with almost inevitable drift in relation to planned timescales. Almost imperceptibly, practitioners, academics, journalists and politicians had gone from discussing a £2.3 billion project to that of a £12.7 billion project

### **4.3 Project politics**

By May 2006 another stage of the *NPfIT* was reached – that of denial with regard to the failure of the project to meet its original aims and objectives. Although endorsed by then British Prime Minister Tony Blair (see Computing, 2006), the *NPfIT*, scholars (Milan, 2005; Randell, 2007; Robertson et al., 2011), continued to cite a plethora of problems associated with the project. The political importance of the NHS (Collins, 2008; Calnan and Gabe, 2009), and *NPfIT* project itself (Pagliari, 2005) would have inevitable meant that the election of a new government in the United Kingdom (in May, 2010), would inevitably implied that the project will be abandoned and not surprisingly, within months of the election of a new UK government, it was announced that the plug would be pulled on *NPfIT*. Would the coalition Government lose faith with IT in the NHS? The answer would be no with a surprising return to a devolved computing philosophy. In 2012, the Department of Health launched its latest IS/IT strategy document (Department of Health, 2012), outlining a vision for how patient data will be at the core of an integrated, demand-driven NHS service through “imaginative” local decision-making. The document suggests that all patient records will be available securely online by 2015 (another revised deadline for delivery of the *NPfIT*).

### **5.0 Reflections on the NPfIT**

The study shows complex service systems design and project management factors impacting the implementation of the *NPfIT*. The study provides a sense-making device that will facilitate an understanding of how service value can be created from successful implementation of IS/IT projects. To this extent, it facilitates the generation of a more in-depth understanding of the complex nature of IS/IT implementation within service-centric organisations.

The reality remains that implementations of IS/IT in service-centric organisations

cannot be understood by separate examination of organisational and technological drivers. Thus, the path to the provision and enhancement of service should be guided by adopting a new perspective to service, such as the Service Dominance Logic (Vargo and Morgan, 2005; Vargo and Lusch, 2008). A change in the project implementation structure of an organisation is required if the revised structure will reflect the desired core vision of the service-centric organisation.

There is no doubt that *NPfIT* was an ambitious and complex project but it had similarities with previous initiatives and projects in the NHS. The authors believe that it would be constructive to judge *NPfIT* in relation to help and learning that was in the public domain at an early stage of the project. Failure to learn from these or heed the lessons may reinforce the view that when the Project Initiation Document (PID) is agreed it seems that the project team enters a tunnel where they are oblivious to the outside world and their own particular environment. In the case of *NPfIT* this was a period of over 13 years. Issues surrounding time have always been a classic element of problems with IS/IT service projects in the public sector (Ojiako, 2012; Ojiako et al., 2012a). There appears to be no real reason why IS/IT projects should take any longer than other projects. However, there are hints that service oriented IS/IT projects carry enough extra complexity to make their outcomes more uncertain. Should public sector projects take any longer than non-public sector project, one may argue there is no reason why they should take more time. However, by their very nature public sector projects tend to be large-scale. In many cases they are national projects. They also tend to be dependent on many diverse stakeholders working together towards a common goal. This was certainly the case for *NPfIT*.

Is *NPfIT* a one-off in relation to being a very large and complex public sector project. In reality there is a body of evidence to suggest that it is common for these types of public sector projects to overrun. The £400 million National Insurance Recording System (*NIRS2*) was several years late and had over 1,500 unresolved system problems. The UK Defence *Trawlerman* had a planned date for acceptance testing of October 1991. The project was abandoned in November 1996 as it was deemed not fit for purpose. A common theme is that delays with the implementation of IS/IT projects almost inevitably puts them at risk of being overtaken by the increasing pace of technological change.

There is also no evidence that transferring the risk of late delivery to Private Finance Initiative (PFI) contractors reduces the tardiness of projects.

Reviewing the case study and its consequences in this paper, one key question remains, *how could a public project overrun on cost to the tune of 450%*? It will appear (based on the findings from the case study, that in the first place, project sponsors of service-centric projects must recognise that users' commitment is crucial to project success. At an early stage key stakeholders stated their disillusionment with the project. Major suppliers left *NPfIT* at various stages. Secondly, the full implications of change should have been much earlier denied. The *NPfIT* was a major cultural change for the NHS. Education and training, especially of the 300,000 estimated NHS staff that may use the system appears not to have been fully scoped and articulated. Thirdly, the roles and responsibilities of the various stakeholders involved with the *NPfIT* project should have been clearly defined at project conception. In the fourth place, systems design while flexible should have emphasised a component-based service architecture that allowed for the retention of the original spine system design. In the fifth place, the scope of the project, especially in relation to impact on behaviour should have been carefully assessed. There is no evidence that this was done. Finally, projects with a considerable service element should not proceed without undertaking adequate risk analysis.

## 6.0 Conclusions

Driven by a number of factors including recognition that service-centricity is well researched, the general perceived lack of interest among service research scholars to examiner factors that impact on project implementation and poor delivery record of major enterprise-wide project, the authors sought to utilise a case study to examine the implementation of IS/IT projects in service-centric organisations and in the process address the primary research question (*What are the key factors that impact on the success of IS/IT projects being implemented within service-centric organisations?*). The case chosen in this case was the UK's National Programme for IT (*NPfIT*), one of the most ambitious public sector service-delivery projects. Based on detailed document examination and cross referencing, we find three distinct factors categorised against an analytical framework developed by Bitran and Lojo (1993) as being the key factors that

impact on the success of IS/IT projects being implemented within service-centric organisations.

Thus, in conclusion, the study highlights the complexities of the complex organisational (service systems and project management) factors that impact on IS/IT service project implementation. The study also extends previous studies which focused on the importance of these organisational factors in enhancing service delivery and innovation by the utilisation of service science as a theoretical lens. In this vein, IS/IT-driven service is conceptualised, designed, and implemented from a holistic perspective, addressing interrelationships with diverse and established fields. From a practitioner's point of view, the study could serve as a sense-making device to those managers who are conceptualising, designing, and implementing IS/IT-driven projects in complex service environments through the articulation of the service experience.

As is expected, the study is not without limitations. In the first place, although case studies have been widely utilised and remain popular in service oriented studies (see Stuart et al., 2002; Voss et al., 2002; Barratt et al., 2011), because they present a viable and real-life means of understanding phenomena through the examination of complex social imperatives, they are noted disadvantages to their utilisation. This might include generalisation (Eisenhardt, 1989). Perhaps an aspect of limitation in the use of case studies that presents opportunities for further studies relates to issues surrounding the rigour of case study research (Berach et al., 2001). Here some scholars (see Slack et al., 2004), have expressed concern about not only case studies being retrospective (as in this particular study), but also being susceptible to construct bias. As such, future studies may seek to further understanding of the emergent themes through quantitative evaluation, for example utilising quantitative modelling. In addition, future work may be directed at seeking to further examine emergent themes through the modelling of relationships between the emergent themes. Such a model will provide a better picture of the relative importance and significance and of the proposed relationships.

## References

- Akkermans, H. and Vos, B. (2003) Amplification in Service supply chains: An exploratory case study from the telecom industry, *Production and Operations Management*, 12 (2), 204–223.

- Anderson, R., et al. (2010) *The NHS's National Programme for Information Technology (NPfIT): A Dossier of Concerns*. <http://homepages.cs.ncl.ac.uk/brian.randell/Concerns.pdf>, accessed 11/05/11.
- Bardhan, I., Demirkan, H., Kannan, P., Kauffman, R. and Sougstad, R. (2010) An Interdisciplinary Perspective on IT Services Management and Service Science, *Journal of Management Information Systems*, 26 (4), 13 – 64.
- Barratt, M., Choi, T. and Li, M. (2011) Qualitative case studies in operations management: Trends, research outcomes, and future research implications, *Journal of Operations Management*, 29 (4), 329-342.
- Beach, R., Muhlemann, A. P., Price, D. H. R., Paterson, A. and Sharp, J. A. (2001) The Role of Qualitative Methods in Production Management Research, *International Journal of Production Economics*, 74 (1-3), 201-212.
- Benbasat, I., Goldstein, D. and Mead, M. (1987) The Case Research Strategy in Studies of Information Systems, *MIS Quarterly*, 11 (3), 369-386.
- Benbasat, I. and Zmud, R. (2003) The Identity crisis within the IS Discipline: Defining and Communicating the Discipline's Core Properties, *MIS Quarterly*, 27(2), 183–194.
- Bendoly, E., Rosenzweig, E. and Stratman, J. (2009) The efficient use of enterprise information for strategic advantage: A data envelopment analysis, *Journal of Operations Management* 27 (4), 310-323.
- Bennett, J. (2004) *A guide to implementing electronic booking – 'the people perspective*. NHS-National Programme for IT, available at: [www.chooseandbook.nhs.uk/documents/implementation/people\\_perspective.pdf](http://www.chooseandbook.nhs.uk/documents/implementation/people_perspective.pdf), accessed 11/05/08.
- Beynon-Davies, P. (1999) Human error and information systems failure: the case of the London ambulance service computer-aided despatch system project, *Interacting with Computers*, 11 (6), 699-720
- Bitran, G. and Lojo, M. (1993) A frame for analyzing service operations, *European Management Journal*, 11 (3), 271–282.
- British Computer Society (2005) *BCS Response to NAO Investigation of NPfIT*. <http://www.bcs.org/upload/pdf/auditofficejan05.pdf>, accessed 11/09/11.
- British Medical Association (2007) *Choose and Book guidance*. [www.bma.org.uk/ap.nsf/Content/chooseandbookguide](http://www.bma.org.uk/ap.nsf/Content/chooseandbookguide), accessed 1/03/08.
- Brydon-Miller, M., Greenwood, D. and Maguire, P. (2003) Why action research? *Action Research*, 1(1), 9–28.
- Burgess, J. (2006), Participatory action research. First person perspectives of a graduate student, *Action Research*, 4(4), 419–437.
- Bygstad, B., and Lanestedt, G. (2009), ICT based service innovation – A challenge for project management. *International Journal of Project Management*, 27 (3), 234-242.
- Calnan, M. and Gabe, J. (2009) *The retratification of primary care in England*. In: Gabe, Jonathan; Calnan, Michael. *The new sociology of the health service*. New York: Routledge, 56-78.
- Carr, N. (2003) IT doesn't matter. *Harvard Business Review*, 81 (5), 41–49.
- Carr, N. (2005) The End of Corporate Computing. *Sloan Management Review*, 46 (3), 67-73.

- Carver, H. and Jackson, W. (2006) A Case Study of the United States Navy's Enterprise Resource Planning System. *MBA Professional Report*, Naval Postgraduate School, Monterey, California, <http://www.dtic.mil/dtic/tr/fulltext/u2/a451388.pdf>, accessed 22/07/11.
- Cavaye, A. (1996) Case study research: A multi-faceted research approach for IS, *Information Systems Journal*, 6, 227-242.
- Collins T. (2007) *Central NHS IT may not work, warns BCS*, Computerweekly.com, 2006.  
<http://www.computerweekly.com/Articles/2006/08/29/218056/Central+NHS+IT+may+not+work,+warns+BCS.htm>, 11 March 2007.
- Collins, T. (2008) *Secret Papers Reveal Blair's Rushed NPfIT Plans*. Computer Weekly blogs, 18 February. Available at: [http://www.computerweekly.com/blogs/tony\\_collins/2008/02/secret-papers-reveal-blairs-ru.html](http://www.computerweekly.com/blogs/tony_collins/2008/02/secret-papers-reveal-blairs-ru.html), accessed 12/03/09.
- Cook, L., Bowen, D., Chase, R., Dasu, S., Stewart, D. and Tansik, D. (2002) Human issues in Service design, *Journal of Operations Management*, 20 (2), 159-174.
- Cooke-Davies, T., Cicmil, S., Crawford, L. and Richardson, K. (2007) We're not in Kansas Anymore, Toto: Mapping the strange landscape of complexity theory and its relationship to project management, *Project Management Journal*, 38(2), 50-61.
- Computing. (2006) *NHS IT chief meets criticism head-on*, <http://www.computing.co.uk/ctg/analysis/1860602/nhs-it-chief-meets-criticism-head>, accessed 12/05/07.
- Curran, J., Meuter, M. and Surprenant, C. (2003) Intentions to Use Self-Service Technologies: A Confluence of Multiple Attitudes, *Journal of Service Research*, 5, 209-224.
- Dearden, J. (1972) MIS is a mirage, *Harvard Business Review*, 50 (1), 90-99.
- Department of Health. (1998) *Information for health: an information strategy for the modern NHS 1998-2005*, [http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH\\_4007832](http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4007832), accessed 15/02/11.
- Department of Health. (2012) *The power of information: putting all of us in control of the health and care information we need*. [http://www.dh.gov.uk/prod\\_consum\\_dh/groups/dh\\_digitalassets/@dh/@en/documents/digitalasset/dh\\_134205.pdf](http://www.dh.gov.uk/prod_consum_dh/groups/dh_digitalassets/@dh/@en/documents/digitalasset/dh_134205.pdf), accessed 01/06/12.
- de Kare-Silver, N. (2005) Reviews: Choose and Book – whose choice is it anyway? *British Medical Journal*, 330 (1093), available at: [www.bmj.com/cgi/content/full/330/7499/1093?maxtoshow¼&HITS¼10&hits¼10&RESULTFORMAT¼&fulltext¼choose&pbbook&searchid¼1&FIRSTINDEX¼0&resourcetype¼HWCIT](http://www.bmj.com/cgi/content/full/330/7499/1093?maxtoshow¼&HITS¼10&hits¼10&RESULTFORMAT¼&fulltext¼choose&pbbook&searchid¼1&FIRSTINDEX¼0&resourcetype¼HWCIT), accessed 11/05/08.
- Dominguez-Péry, C., Ageron, B. and Neubert, G. (2012) A service science framework to enhance value creation in service innovation projects. An RFID case study, *International Journal of Production Economics*, In Press.
- Easton, G. (2010) Critical realism in case study research, *Industrial Marketing Management*, 39 (1), 118-128.
- Eisenhardt, K. (1989) Building Theories from Case Study Research, *Academy of Management Review*, 14 (4), 532-550.



- E-Health Insider (2006) Technical problems with Choose and Book dog GPs. available at: [www.ehiprimarycare.com/News/1891/technical\\_problems\\_with\\_choose\\_and\\_book\\_dog\\_gps](http://www.ehiprimarycare.com/News/1891/technical_problems_with_choose_and_book_dog_gps), accessed 11/07/08.
- Gopal, A., Espinosa, J.A., Gosain, S. and Darcy, D.P. (2011) Coordination and Performance in Global Software Service Delivery: The Vendor's Perspective, *IEEE Transactions on Engineering Management*, 58 (4), 772 – 785
- Grandison, T. and Thomas, J. (2008) Asset reuse and Service science: The delicate balance. *Portland International Conference on Management of Engineering & Technology: PICMET*, University of Cape Town, 2384-2389.
- Grant, S. (2007) Learning through 'being' and 'doing', *Action Research*, 5(3), 265-274.
- Grover, V. and Ramanlal, P. (1999) Six myths of information and markets: Information technology networks, electronic commerce, and the battle for consumer surplus, *MIS Quarterly*, 23 (4), 465-495.
- Gummesson, E. (1994) Service Management: An Evaluation and the Future, *International Journal of Service Industry Management*, 5 (1), 77-96.
- Hendy, J., Reeves, B., Fulop, N., Hutchings, A. and Masseria, C. (2005) Challenges to implementing the national programme for information technology (NPfIT): a qualitative study, *British Medical Journal*, 331, <http://www.bmj.com/content/331/7512/331.pdf%2Bhtml>, accessed 18/08/12.
- Iravani, S., Van Oyen, M. and Sims, K. (2005) Structural Flexibility: a new perspective on the design of manufacturing and service operations, *Management Science*, 51 (2), 151-166.
- Jarvenpaa, S. and Keating, E. (2011) Hallowed Grounds: The Role of Cultural Values, Practices, and Institutions in TMS in an Offshored Complex Engineering Services Project, *IEEE Transactions on Engineering Management*, 58 (4), 786 – 798.
- Jaw, C., Lo, J. and Lin, Y. (2010) The determinants of new Service development: Service characteristics, market orientation, and actualizing innovation effort, *Technovation*, 30 (4), 265-277.
- Joachim, N. (2011) A Literature Review of Research on Service-Oriented Architectures (SOA): Characteristics, Adoption Determinants, Governance Mechanisms, and Business Impact, *Proceedings of the 17th Americas Conference on Information Systems*. Detroit, MI, USA.
- Johns, N. (1999) What is this thing called Service? *European Journal of Marketing*, 33, 958-973.
- Keel, A., Orr, M., Hernandez, R., Patrocinio, E. and Bouchard, J. (2007) From a technology-oriented to a service-oriented approach to IT management, *IBM Systems Journal*, 46 (3), 549 – 564.
- Kerzner, H. (1987) In search of excellence in project management, *Journal of Systems Management*, 38(2), 30-40.
- Kontogiannis, K., Lewis, G. and Smith, D. (2008) A Research Agenda for Service-Oriented Architecture. *Proceedings of the 2nd international Workshop on Systems Development in SOA Environments (SDSOA '08)*. Leipzig, Germany, May 11, 2008.
- Lavikka, R., Smeds, R. and Jaatinen, M. (2009) Coordinating the Service process of two business units towards a joint customer, *Production Planning & Control*, 20 (2), 135- 146.
- Lemon, K. (2010) Setting the Agenda for the Future of Service Research, *Journal of*

- Service Research*, 13 (1), 3.
- Lewis, G., Smith, D. and Kontogiannis, K. (2010) A Research Agenda for Service-Oriented Architecture (SOA): Maintenance and Evolution of Service-Oriented Systems, *Software Engineering Institute, Carnegie Mellon University*. <http://www.sei.cmu.edu/reports/10tn003.pdf>, accessed 17/07/12.
- Maguire, S. and Ojiako, GU. (2007) Interventions for information systems introduction in the NHS, *Health Informatics Journal*, 13 (4), 283-302.
- Maguire, S. (2007) Reviewing 25 years of national information systems in the NHS, *Public Money & Management*, 27 (2), 135-40.
- Maguire, S. (2010) Call to papers, Special Issue on Services Science, *Production Planning and Control*.
- Maguire, S. and Ojiako, GU. (2008) Market led systems development: When customers become users, *Industrial Management and Data Systems*, 108 (2), 173-190.
- Maguire, S., Ojiako, GU., Papadopoulos, T., Shafti, F., Koh, SCH. and Kanellis, P. (2012) Synchronicity and Alignment of Productivity: The Real Value from Services Science? *Production Planning & Control*, 23 (7), 498-512.
- McDermott, C., Kang, H. and Walsh, S. (2001), A framework for technology management in services, *IEEE Transactions on Engineering Management*, 48 (3), 333 – 341.
- McKnight, H., Choudhury, V. and Kacmar, C. (2002), Developing and validating trust measures for e-commerce: an integrative typology, *Information Systems Research*, 13, 334-359.
- Melton, H. and Hartline, M. (2010) Customer and Frontline Employee Influence on New Service Development Performance, *Journal of Service Research*, 13, 411-425.
- Metters, R. (2010) The Neglect of Service Science in the Operations Management Field. *Handbook of Service Science: Service Science, Research and Innovations in the Service Economy*, 4, 309-319.
- Milan, J. (2005) The NPfIT in London: A Case Study, *British Journal of Healthcare Computing & Information Management*, 22(2): 26–29.
- Mintzberg, H. (1985) The Organisation as political arena, *Journal of Management Studies*, 22 (2), 133–154.
- Moussa, S. and Touzani, M. (2010) A Literature Review of Service Research Since 1993, *Journal of Service Science*, 2, 173-212.
- Murphy, J. (2004) Gaining Support from Health Disciplines and Other Stakeholders, *Global Health Informatics Education*, 109, 36-52.
- National Audit Office (2006) *The National Programme for IT in the NHS*. <http://www.nao.org.uk/idoc.ashx?docId=01F31D7C-0681-4477-84E2-DC8034E31C6A&version=-1>, accessed 17/08/12
- National Audit Office (2008) *The National Programme for IT in the NHS: Progress since 2006*, *The National Programme for IT in the NHS: Progress since 2006*. accessed 17/08/12
- National Audit Office (2011) *The National Programme for IT in the NHS: an update on the delivery of detailed care records systems*. <http://www.nao.org.uk/idoc.ashx?docId=b2171d57-3120-40a6-abe4-84b878cbf35c&version=-1>, accessed 17/08/12
- Nissan, E., Galindo, M-A. and Mendez, M. (2011) The future of services in a globalized



- economy, *The Services Industry Journal*, 31(1), 59-78.
- Ojiako, GU. (2012) Using IS/IT to enhance service delivery, *Industrial Management and Data Systems*, 112 (4), 584 – 599.
- Ojiako, GU. and Maguire, S. (2008) Success criteria for systems led transformation in organisations: Implications for global operations management, *Industrial Management and Data Systems*, 108 (7), 887-908.
- Ojiako, GU; Maguire, S; Koh, L; Grainger, T. and Wainwright, D. (2010) Softer perspectives on enhancing the patient experience using IS/IT, *International Journal of Health Care Quality Assurance*, 23 (2), 187-202.
- Ojiako, GU., Maguire, S. and Chipulu, M. (2012a) Thematic elements underlying the delivery of services in high-contact public service encounters, *Production Planning and Control*, In Press.
- Ojiako, GU., Maguire, S. and Ashleigh, M. (2012b) A management perspective on the failure of IS&T projects, *International Journal of Information Technology Project Management*, 3 (3), 1-13.
- Ordanini, A. and Parasuraman, A. (2011) Service Innovation Viewed Through a Service-Dominant Logic Lens: A Conceptual Framework and Empirical Analysis, *Journal of Service Research*, 14 (1), 3-23.
- Orlikowski, W. and Barley, S. (2001) Technology and Institutions: What can Research on Information Technology and Research on Organizations Learn from each other? *MIS Quarterly*, 25 (2), 145–166.
- Ostrom, Amy L., Bitner, M. J., Brown, S. W., Burkhard, K. A., Goul, M., Smith-Daniels, V., Demirkan, H. and Rabinovich, E. (2010) Moving Forward and Making a Difference: Research Priorities for the Science of Service, *Journal of Service Research*, 13 (1), 4-36.
- Overby, E. (2008) Process virtualization theory and the impact of information technology, *Organization Science*, 19 (2), 277-291.
- Pagliari, C. (2005) Implementing the National Programme for IT: What Can We Learn from the Scottish Experience? *Informatics in Primary Care*, 13(2): 105-111.
- Pan, G. (2005) Information systems project abandonment: a stakeholder analysis, *International Journal of Information Management*, 25 (2), 173-184.
- Paton, R. and McLaughlin, S. (2008) The Services Science and Innovation Series, *European Management Journal*, 26 (2), 75-76.
- Paulson, L. (2006) Services Science: A New Field for Today's Economy, *IEEE Computer*, 39 (8), 18–21.
- Pearlson, K., (2001) *Managing and Using Information Systems: A Strategic Approach*. Pub. John Wiley, New York.
- Pinto, J. (2000), Understanding the role of politics in successful project management, *International Journal of Project Management*, 18 (2), 85-91.
- Popping, R. (2000) *Computer-assisted Text Analysis*, London, Thousand Oaks: Sage Publications.
- Randell, B. (2007) A Computer Scientist's Reactions to NPfIT, *Journal of Information Technology*, 22(3). 222–234
- Ren, M. and Lyytinen, K. (2008) Building Enterprise Architecture Agility and Sustenance with SOA, *Communications of the Association for Information Systems*, 22, 75–86.

- Robertson, A., Bates, D. and Sheikh, A. (2011) The rise and fall of England's National Programme for IT, *Journal of the Royal Society of Medicine*, 104, 434—435.
- Sampson, S. (2012) Visualizing Service Operations, *Journal of Service Research*, 15 (2), 182-198.
- Sarah, R., Haslett, T., Molineux, J., Olsen, J., Stephens, J., Tepe, S. and Walker, B. (2002) Business action research in practice – A strategic conversation about conducting action research in business organisations, *Systemic Practice and Action Research*, 15(6), 535–546.
- Scott, F. and Shepherd, J. (2002) *The steadystream of ERP investments*, AMR Research Alert, August 26.
- Smyth, H. and Morris, P. (2007) An epistemological evaluation of research into projects and their management: Methodological issues, *International Journal of Project Management*, 25 (4), 423-436.
- Slack, N., Lewis, M. and Bates, H. (2004) The Two Worlds of Operations Management Research and Practice: Can They Meet, Should They Meet? *International Journal of Operations & Production Management*, 24 (4), pp. 372-387.
- Spanos, Y. (2002) The Relationship between Information and Communications Technology Adoption and Management, *Information and Management*, 39 (8), 659-675.
- Spohrer, J., and Maglio, P. (2008) The Emergence of Service Science: Toward Systematic Service Innovations to Accelerate Co-Creation of Value, *Production and Operations Management*, 17 (3), 238-246.
- Spohrer, J., Maglio, P. P., Bailey, J. and Gruhl, D. (2007), Steps toward a science of Service systems, *Computer*, 40, 71-77.
- Stuart, I., McCutcheon, D., Handfield, R., McLachlin, R. and Samson, D. (2002) Effective case research in operations management: a process perspective, *Journal of Operations Management*, 20 (5), 419–433.
- Umashankar, N., Srinivasan, R., and Hindman, D. (2011) Developing Customer Service Innovations for Service Employees: The Effects of NSD Characteristics on Internal Innovation Magnitude, *Journal of Service Research*, 14 (2), 164-179.
- Vargo, S., and Lusch, L. (2008) Service-Dominant Logic: Continuing the Evolution, *Journal of the Academy of Marketing Science*, 36 (1), 1-10.
- Vargo, S., and Morgan, F. (2005) An historical re-examination of the nature of exchange: The Service-dominant perspective, *Journal of Macromarketing*, 25 (1), 42–53.
- Voss, C., Tsikriktsis, N., and Frohlich, N. (2002) Case research in operations management, *International Journal of Operations & Production Management*, 22 (2), 195–219.
- Voss, C. (2003) Rethinking paradigms of Service: Service in a virtual environment, *International Journal of Operations & Production Management*, 23 (1), 88- 104.
- Voss, C., Roth, A., Rosenzweig, E., Blackmon, E. and Chase, R. (2004) A Tale of Two Countries' Conservatism, Service Quality, and Feedback on Customer Satisfaction, *Journal of Service Research*, 6, 212- 230.
- Wainwright, D. and Waring, T. (2004) Three Domains for Implementing Integrated Information Systems: Redressing the Balance Between Technology, Strategic and Organisational Analysis, *International Journal of Information Management*, 24 (4), 329–346.

- Walker, R. and Johnston, L. (2006) Why consumers do not use technology-enabled Services, *Journal of Services Marketing*, 20 (2), 125.
- Wateridge, J. (1998) How can IS/IT projects be measured for success? *International Journal of Project Management*, 16 (1), 59-63.
- Wikstrom, K., Hellstrom, M., Arto, K., Kujala, J. and Kujala, S. (2009) Services in project-based firms – Four types of business logic, *International Journal of Project Management*, 27 (2), 113-122.
- Yu, A. and Kittler, M. (2012) Matching programme structure to environment: A comparative study of two IS-based change programmes, *International Journal of Project Management*, 30 (6), 740-749.
- Zhao, J., Tanniru, M. and Zhang, L. (2007) Service Computing as the Foundation for Enterprise Agility: Overview of Recent Advances and Introduction to the Special Issue, *Information Systems Frontiers*, 9 (1), pp. 1-8.
- Zhao, J., Goul, M., Purao, S., Vitharana, P. and Wang, H. (2008) Impact of Service-Centric Computing on Business and Education, *Communications of the Association for Information Systems*, 22 (16), 295–310.
- Zhou, J., Gilman, E., Ylianttila, M. and Riekki, J. (2010), Pervasive Service Computing: Visions and Challenges, *10th IEEE International Conference on Computer and Information Technology*, *IEEE Computer Society*, 1335-1339.
- Zimmerer, T. and Yasin, M. (1998) A leadership profile of American project managers, *Project Management Journal*, 21 (1), 31–38.
- Zomerdijk, L. and Voss, C. (2010) Service Design for Experience-Centric Services, *Journal of Service Research*, 13 (1), 67-82.